

Affinity Chromatography, Practical and Theoretical Aspects. By Peter Mohr and Klaus Pommerening. Marcel Dekker, New York, 1986. viii + 301 pp. ISBN 0 8247 7468 X. Price: US\$83.50.

One type of liquid chromatographic technique that has, in recent years, developed into a highly sophisticated process for the separation, isolation, purification and analytic characterization of different types of high and low molecular weight compounds is affinity chromatography. Because of its capability, selectivity and wide application, it has become an important tool in the laboratory and on a larger preparative scale in industry. This analytical technique has already been significant in the study of the structure of biochemical systems and their interaction in the living matter. Dr Mohr and Dr Pommerening, both experts in the fields of biochemistry and enzymology, together with minor contributions from four other experts in the same fields, have produced this book based on their investigations on affinity chromatography, its applications and its current state of development.

The book, which is Vol. 33 in the *Chromatographic Science Series*, is divided into five parts, each of which contains a number of chapters. It starts with a brief introduction and history of affinity chromatography, including a tabulation of the different interactions involved in affinity chromatography and the principles of separation. These interactions are biospecific affinity or bioadsorption, dye-ligand, metal chelate, charge transfer adsorption, hydrophobic interaction and chemisorption. All of these, except bioadsorption, are fully discussed in part 4. The second part deals with the general problems encountered in dealing with this type of separation. It gives a full discussion on the synthesis and properties of various affine matrices to be used and their optimal covalent linkage with the ligand. This process is actually the core of affinity chromatography. Much emphasis is given on the rate of biopolymers like polysaccharides (such as agarose, dextran and cellulose), including their chemical modification, as matrix support and on the proper selection of the affine ligand, e.g. coenzymes, lectins, sugars, nucleic acids and histone. Part three fully discusses bioadsorption, dealing mainly with enzymes, immunoaffinity chromatography and immunoassays, and separation of nucleic acids, lectins, glycoproteins, viruses and cells. The last part deals with related techniques such as affinity partition, affinity electrophoresis in agarose and polyacrylamide gels, and high performance liquid affinity chromatography.

Illustrations and figures are used well to illustrate the text and aid the understanding. Current references are listed at the end of each chapter for further reading. The text ends with some concluding remarks regard-

ing the present status of affinity chromatography as a tool in the study of biomolecules and developments being undertaken to use it on the preparative scale for the production of new biologically-active substances.

This book is a complete summary of the theory, principles and applications of affinity chromatography, particularly in the field of biochemistry. It is fully recommended for students, lecturers and researchers in chemistry, biochemistry, chromatography, biology and in other allied sciences, who want to have knowledge of, or added information on, this specific type of chromatography.

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Topics in Enzyme and Fermentation Biotechnology. Vol. 10. Edited by A. Wiseman. Ellis Horwood Ltd, Chichester, 1986. 218 pp. ISBN 0-85312-767-0. Price £32.55.

This book is the tenth volume of a successful series which was given its initial impetus by the *Handbook of Enzyme Biotechnology*, also edited by Alan Wiseman and published (first edition) by Ellis Horwood in 1975 (a fully revised second edition was published in 1985). The current volume contains six chapters and the cumulative index of volumes 6-9, with chapter 1 forming a general informative introduction to this volume.

Outlines of the production and use of immobilised living microbial cells in chapter 2 ensure that in the biotechnological era of the future, immobilised cells will play an increasingly important role. Chapter 3 presents a more specialised review on immobilised plant cell cultures and describes the advantages claimed for immobilised cells and the progress made towards exploiting such cells in biotechnological processes. This chapter, together with chapter 2, provides a valuable overview of a field of growing importance in biotechnology.

An interesting application of solid state fermentation and kinetic responses relating to the Koji process is discussed in chapter 4, and chapter 5 reviews in general terms the production of xanthan gum by fermentation techniques with economic considerations and fermentation parameters approaches. This chapter demonstrates the considerable increase in interest in biotechnological aspects of carbohydrate chemistry, with the industrial production of carbohydrate polymers and their utilisation as key ingredients in many processed foods is very important. For example, xanthan gum, a carbohydrate polymer, is produced industrially for food and non-food use.